UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,005	03/03/2006	Lars-Berno Fredriksson	21406-00016-US1	9466

30678 7590 05/14/2009

CONNOLLY BOVE LODGE & HUTZ LLP
1875 EYE STREET, N.W.
SUITE 1100
WASHINGTON, DC 20006

EXAMINER	
CLEARY, THOMAS J	

ART UNIT	PAPER NUMBER
2111	

MAIL DATE	DELIVERY MODE
05/14/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/539,005	FREDRIKSSON, LARS-BERNO	
	Examiner	Art Unit	
	Thomas J. Cleary	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 October 2008 and 30 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7-13,15,16 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-13,15,16 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 October 2008* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20081002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Requirement for Information

1. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

2. In response to this requirement, please provide a copy of each of the following items of art referred to in the specification: "Controller area network (CAN) B Part 4: Time-triggered communication" ISO/CD 11898-4 (See Page 2). This document has been previously required by the Examiner, and the IDS of 2 October 2008 appears to cite is as reference 'CA', however, neither a copy of the document nor a statement that the item is unknown or cannot be readily obtained has been provided.

3. In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in the requirement, or where such subject matter is not indicated, the subject matter found in applicant's disclosure.

4. The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

5. The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained may be accepted as a complete reply to the requirement for that item.

6. This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1- 4, 7-13, 15-16, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 1 recites the limitation of “between, at least one of from and to modules” in Line 3. It is unclear if this is intended to mean "at least one of between, from, and to modules".

11. Claim 1 recites the term “and/or” in Line 4. It is unclear if this is intended to require all of the elements of the list (unitive), or at least one of the elements of the list (alternative).

12. Claim 1 recites the limitation of “the said making at least one of more efficient and the reduction” in Lines 9-10. It is unclear if this is intended to mean " the said at least one of making more efficient and the reduction".

13. Claim 1 recites the limitation of “each of the modules is set in relation to…” in Line 14. It is unclear as to what is set in each of the modules, or alternatively, how an entire module is set.

14. Claim 1 recites the limitation of "the virtual schedule" in Lines 15-16. There is insufficient antecedent basis for this limitation in the claim.

15. Claim 2 recites the limitation of “a virtual time schedule” in Line 2. It is unclear if this refers to the virtual schedule of Claim 1.

16. Claim 2 recites the limitation of “a virtual clock” in Lines 3-4. It is unclear if this refers to the virtual clock of Claim 1.

17. Claim 2 recites the limitation of "each module is able to be allocated an actual schedule..." in Lines 5-6. It is unclear as to what the intended metes and bounds of the claim are, since the claim appears to cover anything and everything that does not prohibit a module from being allocated an actual schedule, and thus does not cause any functionality to occur.

18. Claim 2 recites the limitation of "the virtual schedule" in Line 8. It is unclear if this refers to the virtual schedule of Claim 1, the virtual time schedule of Claim 2, or if both the virtual schedule of Claim 1 and the virtual time schedule of Claim 2 are the same, and thus refers to both.

19. Claim 3 recites the limitation of "a virtual clock" in Line 2. It is unclear if this refers to the virtual clock of Claim 1.

20. Claim 3 recites the limitation of "their time" in Line 2. It is unclear as to whether this refers to the time of transmission and reception of messages of Claim 1.

21. Claim 3 recites the limitation of "the different nodes are arranged to base their time in relation to a virtual clock on different references in the system" in Lines 2-3. It is unclear as to how a virtual clock can be on different references in the system, as Claim 1 refers to only a single virtual clock.

22. Claim 3 recites the limitation of "nodes" in Line 2. It is unclear if the nodes are intended to refer to the modules of Claim 1.

23. Claim 4 recites the limitation of "nodes" in Lines 2, 3, and 5. It is unclear if the nodes are intended to refer to the modules of Claim 1.

24. Claim 4 recites the limitation of “different nodes are arranged to be synchronized in different ways” in Line 2. It is unclear if the synchronization way differs between each node, or of each node has a plurality of different ways of being synchronized.

25. Claim 4 recites the limitation of “a virtual clock” in Line 4. It is unclear if this refers to the virtual clock of Claim 1.

26. Claim 4 recites the limitation of “a virtual schedule that concerns the respective node” in Lines 4-5. It is unclear if this refers to the a virtual schedule that relates to the respective modules of Claim 1.

27. Claim 4 recites the limitation of “a bus” in Line 6. It is unclear if this refers to the system’s bus connection of Claim 1.

28. Claim 7 recites the limitation of "a redundancy arises in the communication which is able to be utilized…" in Lines 2-3. It is unclear as to what the intended metes and bounds of the claim are, since the claim appears to cover anything and everything that does not prohibit a redundancy that arises from being utilized, and thus does not cause any functionality to occur.

29. Claim 8 recites the limitation of "messages are arranged to be able to be transmitted in time slots on both sides of an allocated time slot" in Lines 2-3. It is unclear as to what the intended metes and bounds of the claim are, since the claim appears to cover anything and everything that does not prohibit messages from being transmitted in time slots on both sides of an allocated time slot, and thus does not cause any functionality to occur.

30. Claim 8 recites the limitation of "allowing a greater deviation from a virtual clock than half a time slot" in Lines 3-4. It is unclear as to what the intended metes and bounds of the claim are, since the claim appears to cover anything and everything that does not prohibit a greater deviation from a virtual clock than half a time slot from occurring, and thus does not cause any functionality to occur.

31. Claim 8 recites the limitation of "a virtual clock" in Lines 3-4. It is unclear if this refers to the virtual clock of Claim 1.

32. Claim 8 recites the limitation "the correct message" in Line 7. There is insufficient antecedent basis for this limitation in the claim.

33. Claim 8 recites the limitation of "a number of possibilities" in Lines 7-8. It is unclear as to what there are a number of possibilities of.

34. Claim 8 recites the limitation “in advance” in Line 9. It is unclear as to what event the availability of bandwidth is ensured in advance of.

35. Claim 9 recites the limitation of "the length of a respective time slot can be reduced also in the event of handling of stuffing bits" in Lines 2-3. It is unclear as to what the intended metes and bounds of the claim are, since the claim appears to cover anything and everything that does not prohibit the length of a time slot from being reduced when handling stuffing bits, and thus does not cause any functionality to occur.

36. Claim 9 recites the limitation of "a margin for the length of the time slots can be reduced by 12%..." in Lines 4-6. It is unclear as to what the intended metes and bounds of the claim are, since the claim appears to cover anything and everything that does not prohibit the margin for the length of the time slots from being reduced by 12%, and thus does not cause any functionality to occur.

37. Claim 9 recites the limitation "the requirements relating to the lengths of time slots" in Line 4. There is insufficient antecedent basis for this limitation in the claim.

38. Claim 10 recites the limitation of “a discarded message, depending on its priority, being retransmitted immediately” in Lines 6-7. It is unclear how a message can be retransmitted immediately and depending on its priority, as only the message with the

highest priority will be retransmitted immediately, while other messages with lower priority will not be retransmitted immediately.

39. Claim 10 recites the limitation of “an making at least one of more efficient and the reduction is achieved” in Lines 7-8. It is unclear if this occurs as a result of the previous limitations enumerated in Claim 10 (allowing a real-time schedule to vary, utilizing collision detection without discard…, and utilizing the CAN system characteristic).

40. Claim 10 recite the limitation of “the CAN system characteristic that each identity is associated with a unique priority and by a discarded message…being retransmitted immediately” in Lines 5-8. There is insufficient antecedent basis for this limitation in the claims. The claims do not establish that the identified features are characteristics of the CAN system.

41. Claim 10 recites the limitation of "a total system" in Line 11. It is unclear if this is intended to refer to the CAN system of Claim 1.

42. Claim 10 recites the limitation "the previous message" in 12. There is insufficient antecedent basis for this limitation in the claim.

43. Claim 11 recites the limitation "the following message" in Line 5. There is insufficient antecedent basis for this limitation in the claim. It is unclear as to which of the all following messages this refers to.

44. In reference to Claim 11, the term "approximately" in Line 8 is a relative term which renders the claim indefinite. The term "approximately" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what percentage of bus connection utilization is considered to be essentially 100%. In fact, the specification discloses a full 100% bus utilization (See Page 18 Lines 36-38), and not an approximately 100% bus utilization.

45. Claim 11 recites the limitation "this way" in Line 8. There is insufficient antecedent basis for this limitation in the claim. It is unclear as to what way this refers to. It is unclear if this refers to all of the preceding steps of Claim 11, or to the “same way” of Claim 11.

46. Claim 12 recites the limitation of “a virtual schedule” in Lines 2-3. It is unclear if this refers to the virtual schedule of Claim 1.

47. Claim 13 recites the limitation of “with the use of protocols, where each message has a unique priority in the system and retransmission is carried out of messages that

have been discarded" in Lines 2-3. It is unclear as to what actions occur as a result of using protocols that have the identified features.

48. In reference to Claim 15, the term "complex" in Line 3 is a relative term which renders the claim indefinite. The term "complex" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what level of complexity a system must be to be considered complex.

49. In reference to Claim 15, the term "extensive" in Line 3 is a relative term which renders the claim indefinite. The term "extensive" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what level of extensiveness a system must be to be considered extensive.

50. Claim 16 recites the limitation of “a virtual schedule” in Line 3. It is unclear if this refers to the virtual schedule of Claim 1.

51. Claim 18 recites the limitation “it is arranged to work...” in Line 2. It is unclear as to whether this is intended to refer to the arrangement.

52. Claim 18 recites the term “and/or” in Line 2. It is unclear if this is intended to require all of the elements of the list (unitive), or at least one of the elements of the list (alternative).

53. In reference to Claim 18, the term "critical" in Line 4 is a relative term which renders the claim indefinite. The term "critical" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what of importance a value must have to be a critical value.

54. In reference to Claim 18, the term "uncritical" in Line 6 is a relative term which renders the claim indefinite. The term "uncritical" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what of importance a value must have to be an uncritical value.

55. In reference to Claim 18, the term "smaller" in Line 6 is a relative term which renders the claim indefinite. The term "smaller" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the

invention. It is unclear as to what of size a value must have to be a smaller value. It is further unclear as to what value the value is compared against when determining if it is smaller.

56. Claim 18 recites the limitation “more tightly or more often with more tightly spaced or more often appearing time slots” in Lines 4-5. It is unclear if "more tightly spaced...time slots" refers to transfers that take place more tightly, and "more often appearing time slots" refers to transfers that take place more often, or if “more tightly spaced and more often appears time slots” refer to both transfers that take place more tightly and transfers that take place more often.

57. Claim 18 recites the limitation "the transfer interval" in Line 9. There is insufficient antecedent basis for this limitation in the claim.

58. Claim 18 recites the limitation “a value” in Line 10. It is unclear if this refers to the critical value of the uncritical value.

59. Dependent claims inherit the indefiniteness of their parent claims and are rejected under the same reasoning.

Claim Objections

60. Claim 8 is objected to because of the following informalities: In Line 7, the comma following the word "receiver" appears to have been incorrectly used. Appropriate correction is required.

Claim Rejections - 35 USC § 103

61. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

62. Claims 1-4, 7-13, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 4,719,620 to Machino et al. ("Machino") and Applicant's Admitted Prior Art ("AAPA").

63. In reference to Claim 1, Machino discloses an arrangement for making more efficient the utilization of available bandwidth on a system's bus connection between, at least one of from and to modules incorporated in the system (See Column 2 Lines 35-39) or reduction of accuracy requirements of clock functions utilized in the system (See Column 2 Lines 39-40 and 62-67), the system working with a communication carried out

on the bus connection (See Column 1 Lines 8-9), which communication operates in accordance with rules set up in the system and constitutes a combination of event-driven (See Column 3 Lines 47-51) and time-controlled communication functions (See Column 3 Lines 40-47), characterized in that the said functions, together with a rule change in the time-controlled communication function, are arranged to achieve the said making at least one of more efficient and the reduction, which rule change is arranged to give rise to deliberate collisions between messages appearing on the bus connection (See Column 3 Lines 26-66), wherein with a virtual clock, each message is given a time slot in which the message is transmitted without colliding with another message (See Column 3 Lines 28-30), and wherein each of the modules is set in relation to a time of transmission and reception of messages within a given tolerance in relation to the virtual clock and that part of the virtual schedule that relates to the respective modules (See Column 3 Lines 39-66). Machino is silent as to the type of bus system, and does not disclose that the arrangement is comprised in a CAN system. AAPA discloses that a CAN system is a well known bus system (See Page 2 Paragraph 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Machino using a CAN system as the bus system, resulting in the invention of Claim 1, because one of ordinary skill in the art would naturally look to known bus systems when constructing the device of Machino, and the CAN system is well known in various connections (See Page 2 Paragraph 2 of AAPA).

64. In reference to Claim 2, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that a virtual time schedule that is used is arranged to ensure that each message, in normal operating conditions, is allocated a time according to a virtual clock where the transmission of the message is to commence; in that each module is able to be allocated an actual schedule, related to an actual clock in the module, for transmission of the message; and in that the time of transmission is arranged to be earlier than the time allocated in the virtual schedule; and in that actual clocks in the modules are set in relation to the virtual clock (See Column 3 Lines 26-66).

65. In reference to Claim 3, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that different nodes are arranged to base their time in relation to a virtual clock on different references in the system (See Column 3 Lines 26-38).

66. In reference to Claim 4, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that different nodes are arranged to be synchronized in different ways; in that each node sets the time for transmission and reception of messages within a given tolerance in relation to a virtual clock and the part of a virtual schedule that concerns the respective node; in that transmission attempts are arranged to be commenced when a bus is free; in that slots arise in the communication; and in that the transmission takes place in a preceding time slot and a

collision detecting mechanism comprised in the system enables the message to be sent as soon as possible (See Column 3 Lines 26-66).

67. In reference to Claim 7, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that each message is provided with a unique identity, whereby a redundancy arises in the communication which is able to be utilized for at least one of making more efficient and the reduction (See Column 2 Line 59 – Column 3 Line 2).

68. In reference to Claim 8, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that messages are arranged to be able to be transmitted in time slots on both sides of the allocated time slot, which is carried out by allowing a greater deviation from a virtual clock than half a time slot; in that messages are arranged to change places, which is made possible because they are provided with an identity and a module concerned, wherein a receiver, sorts out the correct message, which is made possible by the number of possibilities being limited and by availability of the requisite bandwidth being ensured in advance (See Column 3 Lines 26-66).

69. In reference to Claim 9 Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino does not prohibit either the length of a respective time slot from being reduced in the event of handling of stuffing bits of the margin for the length of the time slots from being reduced by 12% in comparison to the requirements relating

to the lengths of time slots on the basis of a number of stuffing bits that varies from 09-24% of a number of original bits, and thus the length of the time slots can be reduced and the margin for the length of the time slots can be reduced.

70. In reference to Claim 10, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that by allowing a real-time time schedule to vary, by utilizing collision detection without discard with immediate transmission after the termination of the collision and by using a unique identity for each message and, in addition, by utilizing the system characteristic that each identity is associated with a unique priority and by a discarded message, depending on its priority, being retransmitted immediately and making at least one of more efficient and the reduction is achieved; in that by allowing the automatic retransmission and co-coordinating an allocated time slot with the message's priority, the communication's characteristics are tailored according to the requirements of a total system; and in that if the previous message has higher priority than a next, the previous message goes out on the bus immediately in the event of retransmission (See Column 3 Lines 26-66).

71. In reference to Claim 11, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that lost messages compete with subsequent messages in a same way; in that if all following messages have lower priority, the retransmission will result in the following messages being displaced one time slot; in that if the following message has higher priority than the discarded

message, the discarded message will not go out onto the bus connection until there is a message with lower priority or the bus connection becomes free; and in that in this way an approximately 100% bus connection utilization is achieved (See Column 2 Line 52 – Column 3 Line 2).

72. In reference to Claim 12, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that by arranging the system so that it allows messages to change position in a virtual schedule within given limits, it is made possible that alarm messages are not sent according to schedule (See Column 2 Line 52 – Column 3 Line 2).

73. In reference to Claim 13, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that with the use of protocols where each message has a unique priority in the system and retransmission is carried out of messages that have been discarded (See Column 1 Lines 58-53, Column 2 Lines 35-40, and Column 3 Lines 62-65).

74. In reference to Claim 15, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that the system comprises a hierarchy of virtual clocks; and in that the system is complex or extensive and is time-controlled, one or more, even in an extreme case all, of the modules are arranged without multiple clocks (See Column 3 Lines 39-40).

75. In reference to Claim 16, Machino and AAPA disclose the limitations as applied to Claim 1 above. Machino further discloses that an actual schedule is constructed by the respective modules being programmed to send their messages in relation to a virtual schedule (See Column 3 Lines 26-66).

Drawings

76. The drawings are objected to because Figures 1-8 do not contain suitable legends necessary to understand the drawing. See 37 CFR 1.84(o). While Figures 1-8 have reference numbers for the different elements of the invention, the empty frames are not sufficient for understanding the figures. Therefore adequately descriptive legends are required by the examiner. The amendment to the drawings have identified elements A, B, C, D, and Z, in Figures 1 and 2, but have not identified the remaining elements in Figures 1-8.

77. The drawings are objected to because the amendments do not comply with 37 CFR 1.121(d) and 37 CFR 1.84. The drawings contain information relating to the associated Patent Application Publication in the upper margin. The drawings further provide the identification information and "Replacement sheet" marking in the bottom right hand corner, and not in the top margin.

78. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

79. Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one

figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

80. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Specification

81. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code for http://www.ttpforum.org (See Paragraph 3). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Information Disclosure Statement

82. The information disclosure statement filed 2 October 2008 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document;

each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. A copy of reference 'CA' has not been provided.

83. The information disclosure statement filed 2 October 2008 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered. To expedite prosecution, the Examiner has cited and considered TTP/C Protocol, Specification of the TTP/C Protocol, Version .1, 1 February 1999, by TTTech Computertechnik GmbH.

Response to Arguments

84. Applicant's arguments with respect to Claims 1-4, 7-13, 15-16, and 18 have been considered but are moot in view of the new ground(s) of rejection.

85. Applicant has argued that Machino does not disclose that together with a rule change in the time-controlled communication function, are arranged to achieve the said making at least one of more efficient and/or and the reduction, which rule change is arranged to give rise to deliberate collisions between messages appearing on the bus connection~ wherein with a virtual clock, each message is given a time slot in which the message is transmitted without colliding with another message, and wherein each of the modules is set in relation to a time of transmission and reception of messages within a given tolerance in relation to the virtual clock and that part of the virtual schedule that relates to the respective modules (See Page 14). In response, the Examiner notes that, as indicated in the above rejections, these limitations are disclosed in Column 3 Lines 26-66.

Conclusion

86. This Office action has an attached requirement for information under 37 CFR 1.105. A complete reply to this Office action must include a complete reply to the

attached requirement for information. The time period for reply to the attached requirement coincides with the time period for reply to this Office action.

87. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure: “Critical Embedded Automotive Networks", by Philip Koopman et al.; "Design and Analysis of a Robust Real-Time Engine Control Network”, by Michael Ellims et al.; “Time-Triggered Architecture: A Consistent Computing Platform”, by Reinhard Maier et al.; and “The FTT-CAN Protocol for Flexibility in Safety-Critical Systems”, by Joaquim Ferreira et al.

88. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Cleary whose telephone number is (571)272-3624. The examiner can normally be reached on Monday-Thursday (7-3).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas J. Cleary/
Primary Examiner, Art Unit 2111